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10/573,719

03/27/2006

Rosenfeld Josi

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09/27/2007

PHILIPS ELECTRONICS NORTH AMERICA CORPORATION  
INTELLECTUAL PROPERTY & STANDARDS  
370 W. TRIMBLE ROAD MS 91/MG  
SAN JOSE, CA 95131

EXAMINER

LIU, HARRY K

ART UNIT

PAPER NUMBER

3662

MAIL DATE

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09/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/573,719

Applicant(s)

JOSI, ROSENFELD

Examiner

Harry Liu

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/27/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **integrator, correlator and direction of signal flow** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

2. Claims 3,15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter

$$\tau_o \sqrt{(1 - \frac{\tau_o^2}{t^2})}.$$

which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The derivation of second term is recommended for enabling.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 12 rejected for containing indefinite language "may" (line 1).  
5. Claims 14-21 recites the limitation according to claim of "itself" in line 1 of each claim. There is insufficient antecedent basis for this limitation in the claim.

The claims 14-21 will be examined with best understood by examiner as respectively "according to" (claim 13, 13,13,13,17,13,19,19).

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The method of a position determination system with mental math or loadable into memory instead of loaded, does not produce a tangible result. The practical application of the claimed invention cannot be realized until the information is conveyed to the user. For the results to be tangible, it would need to output the information to a user, display it for a user, stored for later use, or used in a tangible manner. Merely determining, selecting, calculating, evaluating and acquiring would not appear to be sufficient to constitute a tangible result, since the outcome of the method has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized.

The claimed invention as a whole must be useful and accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (*Brenner v. Manson*, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96 (1966)); *In re Fisher*, 421 F.3d 1365, 76 USPQ2d 1225 (Fed. Cir. 2005); *In re Ziegler*, 992 F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)).

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Josi (WO 03/019826).

Regarding claims 1,11-12, 13, Josi discloses a position determination of a radio system (page 2, lines 6-12) comprising means to correlate signal received at a unit with a replica/electronic signal (multipath) and process the correlated signals with optimization function comprising an exponential form in combination with a second term (see equation 1 & 9, page 7).

Regarding claims 2-3,14-15, Josi discloses the exponential term and the second term are in the claimed forms (see equation 1 & 9).

Regarding claims 4,16, Josi discloses the integration is for effecting the replica signals (multipath).

Regarding claims 5,17, Josi discloses optimization function and a line of sight (direct path, claim 4) correlation function.

Regarding claims 6,17, Josi discloses superposing the diffuse correlation output with a Line-of-Sight function output (claims 9-10).

Regarding claims 7,19, Josi discloses first operating a multipath mitigation technique (claim 11).

Regarding claims 8-9,20-21, Josi discloses MEDLL and MMSE technique (page 2, line 32, page 3, line 4).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-7, 9- 19, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niederholtz (2005/0036539) in view of Lian (Adaptive Antenna Arrays for Satellite Personal Communication Systems, Virginia tech., January 2, 1999, page 53).

Regarding claims 1, 10-12, 13, Niederholtz discloses a position determination (spread coded, Abstract) in a radio system comprising correlating (Abstract) a received signal with replica signal (multipath, paragraph 0003), processing the correlated signal with an optimization function (MMSE, para 0006). Niederholtz fails to disclose the optimization function comprises an exponential form in combination with a second term. However, it is known that multipath/path loss is a decay function itself since it the signal decays by distance. Furthermore, Lian teaches exponential form with a second term (see page 65, equation 12 –14) and computer program (computer simulation, page 67). It would have been obvious to modify Niederholtz by incorporating claimed exponential form with second term (for multipath) and computer program (claim 12) in order to better represent the correlated signal in a multipath situation processed with computer.

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Regarding claims 2-3, 14-15, Niederholtz as modified by Lian discloses the exponential term (claims 2,14) and the second term (claims 3,15) are in the claimed form (see Niederholtz page 65, equation 12 –14).

Regarding claims 4,7,16,19 Niederholtz as modified by Lian discloses the method comprising effecting an integration (Abstract) with the replica signal (multipath).

Regarding claims 5, 17, Niederholtz as modified by Lian discloses the method comprising fitting the optimization function and a Line-of-Sight correlation function (Lain page 3, table 8 description, page 42, bottom paragraph).

Regarding claims 6-7, 18-19, Niederholtz as modified by Lian discloses the method comprising superposing the diffuse correction output with a Line-of-Sight function with correlation data of a known values (reference, see Figure 6 below).

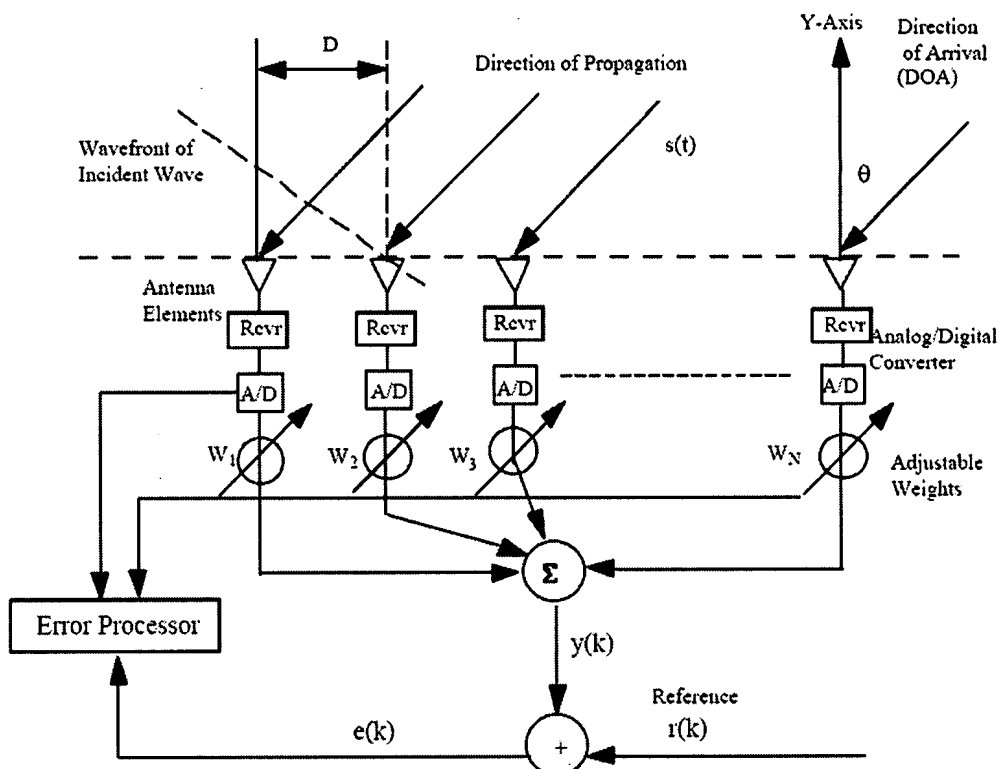


Figure 6 An example of an adaptive antenna array



Regarding claims 9, 21, Niederholtz as modified by Lian discloses the method comprising MMSE (page 68, first paragraph, line 4).

10. Claims 8, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niederholtz (2005/0036539) in view of Lian (Adaptive Antenna Arrays for Satellite Personal Communication Systems, Virginia tech., January 2, 1999, page 53), as applied to claim 1 rejection above, and further in view of Townsend (L1 Carrier Multipath Error Reduction Using MEDLL technology, 1995, Novatel Communications).

Regarding claims 8, 20, Niederholtz as modified by Lian discloses all claim limitations except for MEDLL technique. However, Townsend teaches use of MDELL technique in processing multipath signals for mitigating multipath errors (page 1, Introduction). It would have been obvious to further modify Niederholtz by implementing the MEDLL technique in order to reduce errors created by multipath in a GPS receiver.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Liu whose telephone number is 571-270-1338. The examiner can normally be reached on Monday -Thursday and every other Friday..

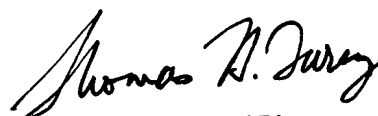
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-270-2338.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Harry Liu  
Examiner  
Art Unit 3662  
September 25, 2007



THOMAS H. TARCZA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600